Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (Original): A method of preventing organ ischemia or reperfusion injury comprising administrating to a living subject in need thereof a pharmaceutical composition comprising:
   a. a serine protease inhibitor; and
   b. adenosine, an adenosine agonist or a pharmaceutically acceptable derivative or prodrug or metabolite thereof.

2. (Currently amended): The method of claim 1, wherein the serine protease inhibitor is selected from the group consisting of 4-(2-aminoethyl) benzenesulfonylfluoride, ~~□-amino-*n*-caproic acid~~ε-amino-*n*-caproic acid, ~~□$_1$-antichymotrypsin~~α_1-antichymotrypsin, antipain, antithrombin III, ~~□$_1$-antitrypsin~~α_1-antitrypsin, *p*-amidinophenylmethyl sulfonyl fluoride, aprotinin, cathepsin/subtilisin inhibitor (Boc-Val-Phe-NHO-Bz-*p*Cl), chymostatin ~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-□-[2-amidohexahydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal)~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-α- [2-amidohexahydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal), chymotrypsin inhibitor I, 3,4-dichloroisocoumarin, diisopropylfluoro phosphate, dipeptidylpeptidase IV inhibitor I (Ile-Pro-Ile), dipeptidylpeptidase IV inhibitor II (H-Glu-(NHO-Bz)-Pyr), ecotin, elastase inhibitor I (Boc-Ala-Ala-Ala-NHO-Bz), ~~□$_2$-macroglobulin~~α_2-macroglobulin, PPACK (*D*-Phe-Pro-Arg-chloromethylketone), PPACK II, N^a-tosyl-Lys chloromethyl ketone, N^a-tosyl-Phe chloromethyl ketone, and any mixture thereof.

3. (Original): The method of claim 1, wherein the adenosine agonist or pharmaceutically

acceptable derivative is selected from the group consisting of AB-MECA (N^6-4-aminobenzyl-5'-*N*-methyl carboxamidoadenosine), CPA (N^6-cyclopentyladenosine), ADAC (N^6- [4-[[[4-[[[(2-aminoethyl) amino] carbonyl] methyl]-anilino] carbonyl] methyl] phenyl] adenosine), CCPA (2-chloro-N^6-cyclopentyladenosine), CHA (N^6-cyclohexyladenosine), GR79236 (N^6-[1*S*, *trans*,2-hydroxy cyclopentyl] adenosine), *S*-ENBA ((2*S*)- N^6-(2-endonorbanyl)adenosine), IAB-MECA (N^6-(4-amino-3-iodobenzyl)adenosine-5'-*N*-methylcarboxamidoadenosine), *R*-PIA (*R*-N^6-(phenyl isopropyl) adenosine), ATL146e (4-{3-[6-amino-9-(5-ethylcarbamoyl-3,4-dihydroxy-tetrahydro-furan-2-yl)-9H-purin-2-yl]-prop-2-ynyl}-cyclohexanecarboxylic acid methyl ester), CGS-21680 (APEC or 2-[*p*-(2-carbonyl-ethyl)-phenyl ethyl amino]-5'-*N*-ethylcarboxamidoadenosine), CV1808 (2-phenylaminoadenosine), HENECA (2-hex-1-ynyl-5'-*N*-ethylcarboxamido adenosine), NECA (5'-*N*-ethyl-carboxamido adenosine), PAPA-APEC (2-(4-[2-[(4-aminophenyl) methyl carbonyl] ethyl] phenyl) ethylamino-5'-*N*-ethyl carboxamidoadenosine), DITC-APEC (2-[*p*-(4-isothiocyanatophenylamino thiocarbonyl-2-ethyl)-phenylethylamino]-5'-*N*-ethylcarboxamido adenosine), DPMA (N^6-(2(3,5-dimethoxy phenyl)-2-(2-methyl phenyl) ethyl)adenosine), *S*-PHPNECA ((*S*)-2-phenylhydroxypropynyl-5'-*N*-ethylcarbox amidoadenosine), WRC-0470 (2-cyclohexylmethylidenehydrazinoadenosine), AMP-579 (1*S*-[1a,2b,3b,4a(S*)]]-4-[7-[[2-(3-chloro-2-thienyl)-1-methylpropyl]amino]-3H-imidazo [4,5-b] pyridyl-3-yl] cyclopentane carboxamide), IB-MECA (N^6- (3-iodobenzyl) adenosine -5'-*N*-methyluronamide), 2-CIADO (2-chloroadenosine), I-ABA (N^6-(4-amino-3-iodobenzyl)adenosine), *S*-PIA (*S*-N^6-(phenylisopropyl) adenosine), 2-[(2-aminoethyl-aminocarbonylethyl) phenylethyl amino]-5'-*N*-ethyl-carboxamido adenosine, 2-Cl-IB-MECA (2-chloro-N^6- (3-iodobenzyl)adenosine-5'-*N*-methyluronamide), polyadenylic acid, and any mixture thereof.

4. (Original): A pharmaceutical composition comprising:
   a. a serine protease inhibitor; and
   b. adenosine, an adenosine agonist or a pharmaceutically acceptable derivative or prodrug or metabolite thereof.

5. (Currently amended): The pharmaceutical composition of claim 4, wherein the serine protease inhibitor is selected from the group consisting of 4-(2-aminoethyl) benzenesulfonylfluoride, ~~□-amino-*n*-caproic acid~~ε-amino-*n*-caproic acid, ~~□$_1$-antichymotrypsin~~α_1-antichymotrypsin, antipain, antithrombin III, ~~□$_1$-antitrypsin~~α_1-antitrypsin, *p*-amidino phenylmethylsulfonyl fluoride, aprotinin, cathepsin/subtilisin inhibitor (Boc-Val-Phe-NHO-Bz-*p*Cl), chymostatin ~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-□-[2-amidohexa hydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenyl alaninal)~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-α-[2-amidohexa hydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenyl alaninal), chymotrypsin inhibitor I, 3,4-dichloroisocoumarin, diisopropylfluorophosphate, dipeptidylpeptidase IV inhibitor I (Ile-Pro-Ile), dipeptidylpeptidase IV inhibitor II (H-Glu-(NHO-Bz)-Pyr), ecotin, elastase inhibitor I (Boc-Ala-Ala-Ala-NHO-Bz), ~~□$_2$-macroglobulin~~α_2-macroglobulin, PPACK (*D*-Phe-Pro-Arg-chloromethylketone), PPACK II, N^a-tosyl-Lys chloromethyl ketone, N^a-tosyl-Phe chloromethyl ketone, and any mixture thereof.

6. (Original): The pharmaceutical composition of claim 4, wherein the adenosine agonist or pharmaceutically acceptable derivative is selected from the group consisting of AB-MECA (N^6-4-aminobenzyl-5'-*N*-methylcarboxamidoadenosine), CPA (N^6-cyclopentyladenosine), ADAC (N^6- [4-[[[4-[[[(2-aminoethyl) amino] carbonyl] methyl]-anilino] carbonyl] methyl] phenyl] adenosine), CCPA (2-chloro-N^6-cyclopentyl adenosine), CHA (N^6-cyclohexyladenosine), GR79236 (N^6-[1*S*, *trans*,2-hydroxy cyclopentyl] adenosine), *S*-ENBA ((2*S*)- N^6-(2-endonorbanyl) adenosine), IAB-MECA (N^6-(4-amino-3-iodobenzyl)adenosine-5'-*N*-methylcarboxamido adenosine), *R*-PIA (*R*-N^6-(phenylisopropyl) adenosine), ATL146e (4-{3-[6-amino-9-(5-ethyl carbamoyl-3,4-dihydroxy-tetrahydro-furan-2-yl)-9H-purin-2-yl]-prop-2-ynyl}-cyclohexane carboxylic acid methyl ester), CGS-21680 (APEC or 2-[*p*-(2-carbonyl-ethyl)-phenyl ethyl amino]-5'-*N*-ethylcarboxamidoadenosine), CV1808 (2-phenylaminoadenosine), HENECA (2-hex-1-ynyl-5'-*N*-ethylcarboxamido adenosine), NECA (5'-*N*-ethyl-carboxamido adenosine), PAPA-APEC (2-(4-[2-[(4-aminophenyl)methylcarbonyl]ethyl] phenyl) ethylamino-5'-*N*-

ethyl carboxamidoadenosine), DITC-APEC (2-[*p*-(4-isothiocyanatophenylamino thiocarbonyl-2-ethyl)-phenylethylamino]-5'-*N*-ethylcarboxamidoadenosine), DPMA (N^6-(2(3,5-dimethoxy phenyl)-2-(2-methylphenyl)ethyl)adenosine), *S*-PHPNECA ((*S*)-2-phenylhydroxypropynyl-5'-*N*-ethylcarboxamidoadenosine), WRC-0470 (2-cyclohexyl methylidenehydrazinoadenosine), AMP-579 (1*S*-[1a,2b,3b,4a(S*)]]-4-[7-[[2-(3-chloro-2-thienyl)-1-methylpropyl]amino]-3H-imidazo [4,5-b] pyridyl-3-yl] cyclopentane carboxamide), IB-MECA (N^6- (3-iodobenzyl)adenosine-5'-*N*-methyluronamide), 2-CIADO (2-chloroadenosine), I-ABA (N^6-(4-amino-3-iodobenzyl) adenosine), *S*-PIA (*S*-N^6-(phenylisopropyl)adenosine), 2-[(2-aminoethyl-aminocarbonylethyl) phenylethyl amino]-5'-*N*-ethyl-carboxamidoadenosine, 2-Cl-IB-MECA (2-chloro-N^6- (3-iodobenzyl) adenosine-5'-*N*-methyluronamide), polyadenylic acid, and any mixture thereof.

7. (Original): A method of preventing organ ischemia or reperfusion injury comprising concomitantly administering to a living subject in need thereof
   a. a serine protease inhibitor; and
   b. adenosine, an adenosine agonist or a pharmaceutically acceptable derivative or prodrug or metabolite thereof.

8. (Currently amended): The method of claim 7, wherein the serine protease inhibitor is selected from the group consisting of 4-(2-aminoethyl) benzenesulfonylfluoride, ~~□-amino-*n*-caproic acid~~ε-amino-*n*-caproic acid, ~~□$_1$-antichymotrypsin~~α_1-antichymotrypsin, antipain, antithrombin III, ~~□$_1$-antitrypsin~~α_1-antitrypsin, *p*-amidinophenylmethyl sulfonyl fluoride, aprotinin, cathepsin/subtilisin inhibitor (Boc-Val-Phe-NHO-Bz-*p*Cl), chymostatin ~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-□-[2-amidohexahydro-4-(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal)~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-α- [2-amidohexahydro-4-(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal), chymotrypsin inhibitor I, 3,4-dichloroisocoumarin, diisopropylfluorophosphate, dipeptidylpeptidase IV inhibitor I (Ile-Pro-Ile), dipeptidylpeptidase IV inhibitor II (H-Glu-(NHO-Bz)-Pyr), ecotin, elastase inhibitor I (Boc-Ala-Ala-Ala-NHO-Bz), ~~□$_2$-macroglobulin~~α_2-macroglobulin, PPACK (*D*-Phe-Pro-

Arg-chloromethylketone), PPACK II, N^a-tosyl-Lys chloromethyl ketone, N^a-tosyl-Phe chloromethyl ketone, and any mixture thereof.

9. (Original): The method of claim 7, wherein the adenosine agonist or pharmaceutically acceptable derivative is selected from the group consisting of AB-MECA (N^6-4-aminobenzyl-5'-*N*-methylcarboxamidoadenosine), CPA (N^6-cyclopentyladenosine), ADAC (N^6- [4-[[[4-[[[(2-aminoethyl) amino] carbonyl] methyl]-anilino] carbonyl] methyl] phenyl] adenosine), CCPA (2-chloro-N^6-cyclopentyladenosine), CHA (N^6-cyclohexyladenosine), GR79236 (N^6-[1*S*, *trans*,2-hydroxycyclopentyl] adenosine), *S*-ENBA ((2*S*)- N^6-(2-endonorbanyl)adenosine), IAB-MECA (N^6-(4-amino-3-iodobenzyl)adenosine-5'-*N*-methylcarboxamidoadenosine), *R*-PIA (*R*-N^6-(phenylisopropyl) adenosine), ATL146e (4-{3-[6-amino-9-(5-ethylcarbamoyl-3,4-dihydroxy-tetrahydro-furan-2-yl)-9H-purin-2-yl]-prop-2-ynyl}-cyclohexanecarboxylic acid methyl ester), CGS-21680 (APEC or 2-[*p*-(2-carbonyl-ethyl)-phenyl ethyl amino]-5'-*N*-ethylcarboxamido adenosine), CV1808 (2-phenylaminoadenosine), HENECA (2-hex-1-ynyl-5'-*N*-ethylcarboxamido adenosine), NECA (5'-*N*-ethyl-carboxamido adenosine), PAPA-APEC (2-(4-[2-[(4-amino phenyl) methylcarbonyl]ethyl] phenyl) ethylamino-5'-*N*-ethyl carboxamidoadenosine), DITC-APEC (2-[*p*-(4-isothiocyanatophenylamino thiocarbonyl-2-ethyl)-phenylethylamino]-5'-*N*-ethylcarboxamidoadenosine), DPMA (N^6-(2(3,5-dimethoxy phenyl)-2-(2-methylphenyl)ethyl)adenosine), *S*-PHPNECA ((*S*)-2-phenylhydroxypropynyl-5'-*N*-ethylcarboxamidoadenosine), WRC-0470 (2-cyclohexylmethylidenehydrazinoadenosine), AMP-579 (1*S*-[1a,2b,3b,4a(S*)]]-4-[7-[[2-(3-chloro-2-thienyl)-1-methylpropyl]amino]-3H-imidazo [4,5-b] pyridyl-3-yl] cyclo pentane carboxamide), IB-MECA (N^6- (3-iodobenzyl)adenosine-5'-*N*-methyluronamide), 2-CIADO (2-chloroadenosine), I-ABA (N^6-(4-amino-3-iodobenzyl) adenosine), *S*-PIA (*S*-N^6-(phenylisopropyl)adenosine), 2-[(2-aminoethyl-aminocarbonylethyl) phenylethyl amino]-5'-*N*-ethyl-carboxamidoadenosine, 2-Cl-IB-MECA (2-chloro-N^6- (3-iodobenzyl)adenosine-5'-*N*-methyluronamide), polyadenylic acid, and any mixture thereof.

10. (Original): A method of preventing organ ischemia or reperfusion injury comprising administering to a living subject in need thereof sequentially in any order
    a. a serine protease inhibitor; and
    b. adenosine, an adenosine agonist or a pharmaceutically acceptable derivative or prodrug or metabolite thereof.

11. (Currently amended): The method of claim 10, wherein the serine protease inhibitor is selected from the group consisting of 4-(2-aminoethyl) benzenesulfonylfluoride, ~~□-amino-*n*-caproic acid~~ε-amino-*n*-caproic acid, ~~□$_1$-antichymotrypsin~~α_1-antichymotrypsin, antipain, antithrombin III, ~~□$_1$-antitrypsin~~α_1-antitrypsin, *p*-amidinophenylmethyl sulfonyl fluoride, aprotinin, cathepsin/subtilisin inhibitor (Boc-Val-Phe-NHO-Bz-*p*Cl), chymostatin ~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-□-[2-amidohexahydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal)~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-α-[2-amidohexahydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal), chymotrypsin inhibitor I, 3,4-dichloroisocoumarin, diisopropylfluorophosphate, dipeptidylpeptidase IV inhibitor I (Ile-Pro-Ile), dipeptidylpeptidase IV inhibitor II (H-Glu-(NHO-Bz)-Pyr), ecotin, elastase inhibitor I (Boc-Ala-Ala-Ala-NHO-Bz), ~~□$_2$-macroglobulin~~α_2-macroglobulin, PPACK (*D*-Phe-Pro-Arg-chloromethylketone), PPACK II, N^a-tosyl-Lys chloromethyl ketone, N^a-tosyl-Phe chloromethyl ketone, and any mixture thereof.

12. (Original): The method of claim 10, wherein the adenosine agonist or pharmaceutically acceptable derivative is selected from the group consisting of AB-MECA (N^6-4-aminobenzyl-5'-*N*-methylcarboxamidoadenosine), CPA (N^6-cyclopentyladenosine), ADAC (N^6- [4-[[[4-[[[(2-aminoethyl) amino] carbonyl] methyl]-anilino] carbonyl] methyl] phenyl] adenosine), CCPA (2-chloro-N^6-cyclopentyladenosine), CHA (N^6-cyclohexyladenosine), GR79236 (N^6-[1*S*, *trans*,2-hydroxycyclopentyl] adenosine), *S*-ENBA ((2*S*)- N^6-(2-endonorbanyl)adenosine), IAB-MECA (N^6-(4-amino-3-iodobenzyl)adenosine-5'-*N*-methylcarboxamidoadenosine), *R*-PIA (*R*-N^6-(phenylisopropyl) adenosine), ATL146e (4-{3-[6-amino-9-(5-ethylcarbamoyl-3,4-

dihydroxy-tetrahydro-furan-2-yl)-9H-purin-2-yl]-prop-2-ynyl}-cyclohexanecarboxylic acid methyl ester), CGS-21680 (APEC or 2-[*p*-(2-carbonyl-ethyl)-phenyl ethyl amino]-5'-*N*-ethylcarbox amido adenosine), CV1808 (2-phenylaminoadenosine), HENECA (2-hex-1-ynyl-5'-*N*-ethylcarboxamido adenosine), NECA (5'-*N*-ethyl-carboxamido adenosine), PAPA-APEC (2-(4-[2-[(4-amino phenyl) methylcarbonyl]ethyl] phenyl) ethylamino-5'-*N*-ethyl carboxamidoadenosine), DITC-APEC (2-[*p*-(4-isothiocyanatophenylamino thiocarbonyl-2-ethyl)-phenylethylamino]-5'-*N*-ethylcarboxamidoadenosine), DPMA (N^6-(2(3,5-dimethoxy phenyl)-2-(2-methylphenyl)ethyl) adenosine), *S*-PHPNECA ((*S*)-2-phenylhydroxypropynyl-5'-*N*-ethylcarboxamidoadenosine), WRC-0470 (2-cyclohexylmethylidenehydrazinoadenosine), AMP-579 (1*S*-[1a,2b,3b,4a(S*)]]-4-[7-[[2-(3-chloro-2-thienyl)-1-methylpropyl]amino]-3H-imidazo [4,5-b] pyridyl-3-yl] cyclo pentane carboxamide), IB-MECA (N^6- (3-iodobenzyl)adenosine-5'-*N*-methyluronamide), 2-CIADO (2-chloroadenosine), I-ABA (N^6-(4-amino-3-iodobenzyl) adenosine), *S*-PIA (*S*-N^6-(phenylisopropyl)adenosine), 2-[(2-aminoethyl-aminocarbonylethyl) phenylethyl amino]-5'-*N*-ethyl-carboxamidoadenosine, 2-Cl-IB-MECA (2-chloro-N^6- (3-iodobenzyl)adenosine-5'-*N*-methyluronamide), polyadenylic acid, and any mixture thereof.

13. (Original): A method of preventing organ or tissue injury at a predetermined point or period of intervention comprising administrating to a living subject in need thereof a pharmaceutical composition comprising:
    a. a serine protease inhibitor; and
    b. adenosine, an adenosine agonist or a pharmaceutically acceptable derivative or prodrug or metabolite thereof.

14. (Original): The method of claim 13, wherein the organ or tissue injury is related to at least one of cardiac surgery, non-surgical cardiac revascularization, organ transplantation, perfusion, ischemia, reperfusion, ischemia-reperfusion injury, oxidant injury, cytokine induced injury, shock induced injury, resuscitations injury, and apoptosis.

15. (Original): The method of claim 13, wherein the administrating is taken at the predetermined point of intervention related to at least one of pre-treatment regimen, pharmacological preconditioning, reperfusion, or post interventional therapy, wherein the pharmacological preconditioning is a treatment administered before the ischemic intervention followed by a brief period of reperfusion or washout.

16. (Currently amended): The method of claim 13, wherein the serine protease inhibitor is selected from the group consisting of 4-(2-aminoethyl) benzenesulfonylfluoride, ~~□-amino-*n*-caproic acid~~ε-amino-*n*-caproic acid, ~~□$_1$-antichymotrypsin~~α_1-antichymotrypsin, antipain, antithrombin III, ~~□$_1$-antitrypsin~~α_1-antitrypsin, *p*-amidinophenylmethyl sulfonyl fluoride, aprotinin, cathepsin/subtilisin inhibitor (Boc-Val-Phe-NHO-Bz-*p*Cl), chymostatin ~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-□-[2-amidohexahydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal)~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-α-[2-amidohexahydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal), chymotrypsin inhibitor I, 3,4-dichloroisocoumarin, diisopropylfluorophosphate, dipeptidylpeptidase IV inhibitor I (Ile-Pro-Ile), dipeptidylpeptidase IV inhibitor II (H-Glu-(NHO-Bz)-Pyr), ecotin, elastase inhibitor I (Boc-Ala-Ala-Ala-NHO-Bz), ~~□$_2$-macroglobulin~~α_2-macroglobulin, PPACK (*D*-Phe-Pro-Arg-chloromethylketone), PPACK II, N^a-tosyl-Lys chloromethyl ketone, N^a-tosyl-Phe chloromethyl ketone, and any mixture thereof.

17. (Original): The method of claim 13, wherein the adenosine agonist or pharmaceutically acceptable derivative is selected from the group consisting of AB-MECA (N^6-4-aminobenzyl-5'-*N*-methylcarboxamidoadenosine), CPA (N^6-cyclopentyladenosine), ADAC (N^6- [4-[[[4-[[[(2-aminoethyl) amino] carbonyl] methyl]-anilino] carbonyl] methyl] phenyl] adenosine), CCPA (2-chloro-N^6-cyclopentyladenosine), CHA (N^6-cyclohexyladenosine), GR79236 (N^6-[1*S*, *trans*,2-hydroxycyclopentyl] adenosine), *S*-ENBA ((2*S*)- N^6-(2-endonorbanyl)adenosine), IAB-MECA (N^6-(4-amino-3-iodobenzyl)adenosine-5'-*N*-methylcarboxamidoadenosine), *R*-PIA (*R*-N^6-(phenylisopropyl) adenosine), ATL146e (4-{3-[6-amino-9-(5-ethylcarbamoyl-3,4-

dihydroxy-tetrahydro-furan-2-yl)-9H-purin-2-yl]-prop-2-ynyl}-cyclohexanecarboxylic acid methyl ester), CGS-21680 (APEC or 2-[*p*-(2-carbonyl-ethyl)-phenyl ethyl amino]-5'-*N*-ethylcarboxamidoadenosine), CV1808 (2-phenylaminoadenosine), HENECA (2-hex-1-ynyl-5'-*N*-ethylcarboxamido adenosine), NECA (5'-*N*-ethyl-carboxamido adenosine), PAPA-APEC (2-(4-[2-[(4-aminophenyl) methyl carbonyl]ethyl] phenyl) ethylamino-5'-*N*-ethyl carboxamidoadenosine), DITC-APEC (2-[*p*-(4-isothiocyanatophenylamino thiocarbonyl-2-ethyl)-phenylethylamino]-5'-*N*-ethylcarboxamidoadenosine), DPMA (N^6-(2(3,5-dimethoxy phenyl)-2-(2-methyl phenyl) ethyl)adenosine), *S*-PHPNECA ((*S*)-2-phenylhydroxypropynyl-5'-*N*-ethyl carboxamidoadenosine), WRC-0470 (2-cyclohexylmethylidenehydrazinoadenosine), AMP-579 (1*S*-[1a,2b,3b,4a(S*)]]-4-[7-[[2-(3-chloro-2-thienyl)-1-methylpropyl]amino]-3H-imidazo [4,5-b] pyridyl-3-yl] cyclopentane carboxamide), IB-MECA (N^6- (3-iodo benzyl)adenosine-5'-*N*-methyluronamide), 2-CIADO (2-chloroadenosine), I-ABA (N^6-(4-amino-3-iodobenzyl) adenosine), *S*-PIA (*S*-N^6-(phenylisopropyl)adenosine), 2-[(2-amino ethyl-aminocarbonylethyl) phenylethyl amino]-5'-*N*-ethyl-carboxamidoadenosine, 2-Cl-IB-MECA (2-chloro-N^6- (3-iodobenzyl)adenosine-5'-*N*-methyluronamide), polyadenylic acid, and any mixture thereof.

18. (Original): A method of preventing organ ischemia or reperfusion injury comprising administrating to a living subject in need thereof a pharmaceutical composition comprising:

a. a protease inhibitor; and

b. an agent that alters activities of G protein coupled receptors and cAMP, an analog or a pharmaceutically acceptable derivative or prodrug or metabolite thereof.

19. (Currently amended): The method of claim 18, wherein the protease inhibitor is selected from the group consisting of 4-(2-aminoethyl) benzenesulfonylfluoride, ~~□-amino-*n*-caproic acid~~ε-amino-*n*-caproic acid, ~~□$_1$-antichymotrypsin~~α_1-antichymotrypsin, antipain, antithrombin III, ~~□$_1$-antitrypsin~~α_1-antitrypsin, *p*-amidinophenylmethyl sulfonyl fluoride, aprotinin, cathepsin/subtilisin inhibitor (Boc-Val-Phe-NHO-Bz-*p*Cl), chymostatin ~~([(*S*)-~~

~~1-carboxy-2-phenylethyl]-carbamoyl-□-[2-amidohexahydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal)~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-α-[2-amidohexahydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal), chymotrypsin inhibitor I, 3,4-dichloroisocoumarin, diisopropylfluoro phosphate, dipeptidylpeptidase IV inhibitor I (Ile-Pro-Ile), dipeptidylpeptidase IV inhibitor II (H-Glu-(NHO-Bz)-Pyr), ecotin, elastase inhibitor I (Boc-Ala-Ala-Ala-NHO-Bz), ~~□$_2$-macroglobulin~~α_2-macroglobulin, PPACK (*D*-Phe-Pro-Arg-chloromethylketone), PPACK II, N^a-tosyl-Lys chloromethyl ketone, N^a-tosyl-Phe chloromethyl ketone, acetyl-pepstatin (Ac-Val-Val-(3*S*,4*S*)-Sta-Ala-(3*S*,4*S*)-Sta-OH), calpain inhibitor I (*N*-acetyl-Leu-Leu-norleucinal), calpain inhibitor II (*N*-acetyl -Leu-Leu-Met-CHO), amastatin ([(2*S*, 2*R*)]-3-amino-2-hydroxy-5-methylhexanoyl] -Val-Val-Asp-OH), arphamenine A ((2*R*,5*S*)-5-amino-8-guanidino-4-oxo-2-phenylmethyl octanoic acid), arphamenine B ((2*R*,5*S*)-5-amino-8-guanidino-4-oxo-2-*p*-hydroxyphenyl methyloctanoic acid), benzamidine, bestatin ([(2*S*, 2*R*)-3-amino-2-hydroxy-4-phenyl butanoyl] -*L*-Leucine), CA-074 ((*L*-3-*trans*-[propylcarbamoyl]oxirane-2-carbonyl)-*L*-isoleucyl-*L*-proline), CA-074-Me ((*L*-3-*trans*-[propylcarbamoyl]oxirane-2-carbonyl)-*L*-isoleucyl-*L*-proline-methylester), calpastatin, calpeptin (benzyloxycarbonylleucyl-norleucinal), carboxypeptidase inhibitor, cathepsin inhibitor I (*Z*-Phe-Gly-NHO-Bz), cathepsin inhibitor II (*Z*-Phe-Gly-NHO-Bz-*p*Me), cathepsin inhibitor III (*Z*-Phe-Gly-NHO-Bz-*p*OMe), cathepsin B inhibitor I (*Z*-Phe-Ala-CH_2F), cathepsin B inhibitor II (Ac-Leu-Val-lysinal), cathepsin L inhibitor I (*Z*-Phe-Phe- CH_2F), cathepsin L inhibitor II (*Z*-Phe-Tyr-CHO), cathepsin L inhibitor III (*Z*-Phe-Tyr-(*t*-Bu)-CHN_2), cathepsin L inhibitor IV (1-naphthalenesulfonyl-Ile-Trp-CHO), cathepsin L inhibitor V (*Z*-Phe-Tyr(O*t*Bu)-COCHO), cathepsin L inhibitor VI ~~(*N*-(4-biphenylacetyl)-*S*-methylcysteine-(*D*)-Arg-Phe-□-phenethylamide)~~(*N*-(4-biphenylacetyl)-*S*-methylcysteine-(*D*)-Arg-Phe-β-phenethylamide), cathepsin S inhibitor (*Z*-Phe-Leu-COCHO), cystatin, diprotin A (H-Ile-Pro-Ile-OH), E-64 (*trans*-epoxysuccinyl-*L*-leucylamido-(4-guanidino)butane), E-64 d (loxistatin, or (2*S*,3*S*)-*trans*-epoxysuccinyl-*L*-leucylamido-3-methylbutane ethyl ester), ebelactone A (3,11-dihydroxy-2,4,6,8,10,12-hexamethyl-9-oxo-6-tetradecenoic 1,3-lactone), ebelactone B (2-ethyl-3,11-dihydroxy-4,6,8,10,12-penta methyl -9-oxo-6-

tetradecenoic 1,3-lactone), EDTA (ethylenediamine tetraacetic acid), EGTA ~~(ethyleneglycol-*bis*(□-aminoethyl)-*N,N,N',N'*-tetraacetic acid)~~(ethyleneglycol-*bis*(β-aminoethyl)-*N,N,N',N'*-tetraacetic acid), elastase inhibitor II (MeOSuc-Ala-Ala-Pro-Ala-CMK), elastase inhibitor III (MeOSuc-Ala-Ala-Pro-Val-CMK), elastatinal (Leu-(Cap)-Gln-Ala-al or *N*-[(*S*)-1-carboxy-isopentyl)-carbamoyl-alpha-(2-iminohexahydro-4(*S*)-pyrimidyl]-*L*-glycyl-*L*-glutaminyl-*L*-alaninal), E-64 (*trans*-epoxysuccinyl-*L*-leucylamido-(4-guanidino)butane), E-64 d (loxistatin, or (2*S*,3*S*)-*trans*-epoxysuccinyl-*L*-leucylamido-3-methylbutane ethyl ester), *N*-ethyl maleimide, GGACK (1,5-dansyl-*L*-glutamyl-*L*-glycyl-*L*-arginine chloro methyl ketone), galardin (*N*-[(2*S*)-(methoxycarbonylmethyl)-4-methylpentanoyl]-*L*-tryptophan-methyl amide), 2-guanidinoethylmercaptosuccinic acid, hirudin, HIV protease inhibitor (Ac-Leu-Val-phenylalaninal), leuhistin (((2*R*,3*S*)-3-amino-2-hydroxy-2-(1H-imidazol-4-ylmethyl)-5-methyl)-5-methylhexanoic acid), leupeptin (acetyl-leucyl-leucyl-arginal), NCO-700, PEFABLOC SC (4-(2-aminoethyl)-benzenesulfonyl fluoride), pepstatin (isovaleryl-Val-Val-4-amino-3-hydroxy-6-methylheptanoyl-Ala-4-amino-3-hydroxy-6-methylheptanoic acid), phebestin ((2*S*,3*R*)-3-amino-2-hydroxy-4-phenylbutanoyl-*L*-valyl-*L*-phenylalanine), PMSF (phenyl methyl sulfonyl fluoride), phosphoramidon (*N*-alpha-*L*-rhamnopyranosyloxy(hydroxyl phosphinyl)-*L*-Leucyl-*L*-tryptophan, plummer's inhibitor (*D,L*-2-mercaptomethyl-3-guanidino-ethylthiopropanoic acid), 1,10-phenanthroline, subtilisin inhibitor I (Boc-Ala-Ala-NHO-Bz), subtilisin inhibitor II (*Z*-Gly-Phe-NHO-Bz), subtilisin inhibitor III (*Z*-Gly-Phe-NHO-Bz-*p*OMe), subtilisin inhibitor IV (Boc-Pro-Phe-NHO-Bz-*p*Cl), subtilisin inhibitor V (Boc-Ala-Pro-Phe-NHO-Bz), TIMP-2 (tissue inhibitor of metalloproteinase 2), trypsin inhibitor, secretory leukocyte protease inhibitor, and any mixture there of.

20. (Original): The method of claim 18, wherein the agent that alters activities of G protein coupled receptors and cAMP or pharmaceutically acceptable derivative is selected from the group consisting of AB-MECA (N^6-4-aminobenzyl-5'-*N*-methylcarboxamidoadenosine), CPA (N^6-cyclopentyladenosine), ADAC (N^6- [4-[[[4-[[[(2-aminoethyl) amino] carbonyl] methyl]-anilino] carbonyl] methyl] phenyl] adenosine), CCPA (2-chloro-N^6-cyclopentyl adenosine), CHA (N^6-cyclohexyladenosine),

GR79236 (N^6-[1*S*, *trans*,2-hydroxycyclo pentyl] adenosine), *S*-ENBA ((2*S*)- N^6-(2-endonorbanyl)adenosine), IAB-MECA (N^6-(4-amino-3-iodobenzyl)adenosine-5'-*N*-methylcarboxamidoadenosine), *R*-PIA (*R*-N^6-(phenyl isopropyl) adenosine), ATL146e (4-{3-[6-amino-9-(5-ethylcarbamoyl-3,4-dihydroxy-tetrahydro-furan-2-yl)-9H-purin-2-yl]-prop-2-ynyl}-cyclohexanecarboxylic acid methyl ester), CGS-21680 (APEC or 2-[*p*-(2-carbonyl-ethyl)-phenyl ethyl amino]-5'-*N*-ethylcarboxamidoadenosine), CV1808 (2-phenylaminoadenosine), HENECA (2-hex-1-ynyl-5'-*N*-ethylcarboxamido adenosine), NECA (5'-*N*-ethyl-carboxamido adenosine), PAPA-APEC (2-(4-[2-[(4-aminophenyl)methylcarbonyl]ethyl] phenyl) ethylamino-5'-*N*-ethyl carboxamidoadenosine), DITC-APEC (2-[*p*-(4-isothiocyanatophenylamino thio carbonyl-2-ethyl)-phenylethylamino]-5'-*N*-ethylcarboxamidoadenosine), DPMA (N^6-(2(3,5-dimethoxy phenyl)-2-(2-methylphenyl)ethyl)adenosine), *S*-PHPNECA ((*S*)-2-phenylhydroxypropynyl-5'-*N*-ethylcarboxamidoadenosine), WRC-0470 (2-cyclohexyl methylidenehydrazinoadenosine), AMP-579 (1*S*-[1a,2b,3b,4a(S*)]]-4-[7-[[2-(3-chloro-2-thienyl)-1-methylpropyl]amino]-3H-imidazo [4,5-b] pyridyl-3-yl] cyclopentane carboxamide), IB-MECA (N^6- (3-iodobenzyl)adenosine-5'-*N*-methyluronamide), 2-CIADO (2-chloroadenosine), I-ABA (N^6-(4-amino-3-iodobenzyl) adenosine), *S*-PIA (*S*-N^6-(phenylisopropyl)adenosine), 2-[(2-aminoethyl-aminocarbonylethyl) phenylethyl amino]-5'-*N*-ethyl-carboxamidoadenosine, 2-Cl-IB-MECA (2-chloro-N^6- (3-iodobenzyl) adenosine-5'-*N*-methyluronamide), adenosine, polyadenylic acid, and any mixture thereof.

21. (Original): A pharmaceutical composition comprising:
    a. a protease inhibitor; and
    b. an agent that alters activities of G protein coupled receptors and cAMP or a pharmaceutically acceptable derivative or prodrug thereof.

22. (Currently amended): The pharmaceutical composition of claim 21, wherein the protease inhibitor is selected from the group consisting of 4-(2-aminoethyl) benzenesulfonylfluoride, ~~□-amino-*n*-caproic acid~~ε-amino-*n*-caproic acid, ~~□~~$_1$-

~~antichymotrypsin~~α_1-antichymotrypsin, antipain, antithrombin III, ~~□$_1$-antitrypsin~~α_1-antitrypsin, *p*-amidinophenylmethyl sulfonyl fluoride, aprotinin, cathepsin/subtilisin inhibitor (Boc-Val-Phe-NHO-Bz-*p*Cl), chymostatin ~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-□-[2-amidohexahydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal)~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-α-[2-amidohexahydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal), chymotrypsin inhibitor I, 3,4-dichloroisocoumarin, diisopropylfluoro phosphate, dipeptidylpeptidase IV inhibitor I (Ile-Pro-Ile), dipeptidylpeptidase IV inhibitor II (H-Glu-(NHO-Bz)-Pyr), ecotin, elastase inhibitor I (Boc-Ala-Ala-Ala-NHO-Bz), ~~□$_2$-macroglobulin~~α_2-macroglobulin, PPACK (*D*-Phe-Pro-Arg-chloromethylketone), PPACK II, N^a-tosyl-Lys chloromethyl ketone, N^a-tosyl-Phe chloromethyl ketone, acetyl-pepstatin (Ac-Val-Val-(3*S*,4*S*)-Sta-Ala-(3*S*,4*S*)-Sta-OH), calpain inhibitor I (*N*-acetyl-Leu-Leu-norleucinal), calpain inhibitor II (*N*-acetyl -Leu-Leu-Met-CHO), amastatin ([(2*S*, 2*R*)]-3-amino-2-hydroxy-5-methylhexanoyl] -Val-Val-Asp-OH), arphamenine A ((2*R*,5*S*)-5-amino-8-guanidino-4-oxo-2-phenylmethyl octanoic acid), arphamenine B ((2*R*,5*S*)-5-amino-8-guanidino-4-oxo-2-*p*-hydroxyphenyl methyloctanoic acid), benzamidine, bestatin ([(2*S*, 2*R*)-3-amino-2-hydroxy-4-phenyl butanoyl] -*L*-Leucine), CA-074 ((*L*-3-*trans*-[propylcarbamoyl]oxirane-2-carbonyl)-*L*-isoleucyl-*L*-proline), CA-074-Me ((*L*-3-*trans*-[propylcarbamoyl]oxirane-2-carbonyl)-*L*-isoleucyl-*L*-proline-methylester), calpastatin, calpeptin (benzyloxycarbonylleucyl-norleucinal), carboxypeptidase inhibitor, cathepsin inhibitor I (*Z*-Phe-Gly-NHO-Bz), cathepsin inhibitor II (*Z*-Phe-Gly-NHO-Bz-*p*Me), cathepsin inhibitor III (*Z*-Phe-Gly-NHO-Bz-*p*OMe), cathepsin B inhibitor I (*Z*-Phe-Ala-CH_2F), cathepsin B inhibitor II (Ac-Leu-Val-lysinal), cathepsin L inhibitor I (*Z*-Phe-Phe-CH_2F), cathepsin L inhibitor II (*Z*-Phe-Tyr-CHO), cathepsin L inhibitor III (*Z*-Phe-Tyr-(*t*-Bu)-CHN_2), cathepsin L inhibitor IV (1-naphthalenesulfonyl-Ile-Trp-CHO), cathepsin L inhibitor V (*Z*-Phe-Tyr(O*t*Bu)-COCHO), cathepsin L inhibitor VI ~~(*N*-(4-biphenylacetyl)-*S*-methylcysteine-(*D*)-Arg-Phe-□-phenethylamide)~~(*N*-(4-biphenylacetyl)-*S*-methylcysteine-(*D*)-Arg-Phe-β-phenethylamide), cathepsin S inhibitor (*Z*-Phe-Leu-COCHO), cystatin, diprotin A (H-Ile-Pro-Ile-OH), E-64 (*trans*-epoxysuccinyl-*L*-leucylamido-(4-guanidino)butane), E-64 d (loxistatin, or (2*S*,3*S*)-*trans*-epoxysuccinyl-*L*-

leucylamido-3-methylbutane ethyl ester), ebelactone A (3,11-dihydroxy-2,4,6,8,10,12-hexamethyl-9-oxo-6-tetradecenoic 1,3-lactone), ebelactone B (2-ethyl-3,11-dihydroxy-4,6,8,10,12-penta methyl -9-oxo-6-tetradecenoic 1,3-lactone), EDTA (ethylenediamine tetraacetic acid), EGTA ~~(ethyleneglycol-*bis*(□-aminoethyl)-*N,N,N',N'*-tetraacetic acid)~~(ethyleneglycol-*bis*(β-aminoethyl)-*N,N,N',N'*-tetraacetic acid), elastase inhibitor II (MeOSuc-Ala-Ala-Pro-Ala-CMK), elastase inhibitor III (MeOSuc-Ala-Ala-Pro-Val-CMK), elastatinal (Leu-(Cap)-Gln-Ala-al or *N*-[(*S*)-1-carboxy-isopentyl)-carbamoyl-alpha-(2-iminohexahydro-4(*S*)-pyrimidyl]-*L*-glycyl-*L*-glutaminyl-*L*-alaninal), E-64 (*trans*-epoxysuccinyl-*L*-leucylamido-(4-guanidino)butane), E-64d (loxistatin, or (2*S*,3*S*)-*trans*-epoxysuccinyl-*L*-leucylamido-3-methylbutane ethyl ester), *N*-ethyl maleimide, GGACK (1,5-dansyl-*L*-glutamyl-*L*-glycyl-*L*-arginine chloro methyl ketone), galardin (*N*-[(2*S*)-(methoxycarbonylmethyl)-4-methylpentanoyl]-*L*-tryptophan-methyl amide), 2-guanidinoethylmercaptosuccinic acid, hirudin, HIV protease inhibitor (Ac-Leu-Val-phenylalaninal), leuhistin (((2*R*,3*S*)-3-amino-2-hydroxy-2-(1H-imidazol-4-ylmethyl)-5-methyl)-5-methylhexanoic acid), leupeptin (acetyl-leucyl-leucyl-arginal), NCO-700, PEFABLOC SC (4-(2-aminoethyl)-benzenesulfonyl fluoride), pepstatin (isovaleryl-Val-Val-4-amino-3-hydroxy-6-methylheptanoyl-Ala-4-amino-3-hydroxy-6-methylheptanoic acid), phebestin ((2*S*,3*R*)-3-amino-2-hydroxy-4-phenylbutanoyl-*L*-valyl-*L*-phenylalanine), PMSF (phenyl methyl sulfonyl fluoride), phosphoramidon (*N*-alpha-*L*-rhamnopyranosyloxy(hydroxyl phosphinyl)-*L*-Leucyl-*L*-tryptophan, plummer's inhibitor (*D,L*-2-mercaptomethyl-3-guanidino-ethylthiopropanoic acid), 1,10-phenanthroline, subtilisin inhibitor I (Boc-Ala-Ala-NHO-Bz), subtilisin inhibitor II (*Z*-Gly-Phe-NHO-Bz), subtilisin inhibitor III (*Z*-Gly-Phe-NHO-Bz-*p*OMe), subtilisin inhibitor IV (Boc-Pro-Phe-NHO-Bz-*p*Cl), subtilisin inhibitor V (Boc-Ala-Pro-Phe-NHO-Bz), TIMP-2 (tissue inhibitor of metalloproteinase 2), trypsin inhibitor, secretory leukocyte protease inhibitor, and any mixture there of.

23. (Original): The pharmaceutical composition of claim 21, wherein the agent that alters activities of G protein coupled receptors and cAMP or pharmaceutically acceptable derivative is selected from the group consisting of AB-MECA (N^6-4-aminobenzyl-5'-*N*-

methylcarbox amidoadenosine), CPA (N^6-cyclopentyladenosine), ADAC (N^6- [4-[[[4-[[[(2-aminoethyl) amino] carbonyl] methyl]-anilino] carbonyl] methyl] phenyl] adenosine), CCPA (2-chloro-N^6-cyclopentyladenosine), CHA (N^6-cyclohexyladenosine), GR79236 (N^6-[1*S*, *trans*,2-hydroxycyclopentyl] adenosine), *S*-ENBA ((2*S*)- N^6-(2-endonorbanyl)adenosine), IAB-MECA (N^6-(4-amino-3-iodobenzyl)adenosine-5'-*N*-methylcarboxamidoadenosine), *R*-PIA (*R*-N^6-(phenylisopropyl) adenosine), ATL146e (4-{3-[6-amino-9-(5-ethyl carbamoyl -3,4-dihydroxy-tetrahydro-furan-2-yl)-9H-purin-2-yl]-prop-2-ynyl}-cyclohexanecarboxylic acid methyl ester), CGS-21680 (APEC or 2-[*p*-(2-carbonyl-ethyl)-phenyl ethyl amino]-5'-*N*-ethylcarboxamidoadenosine), CV1808 (2-phenylamino adenosine, HENECA (2-hex-1-ynyl-5'-*N*-ethylcarboxamido adenosine), NECA (5'-*N*-ethyl-carboxamido adenosine), PAPA-APEC (2-(4-[2-[(4-aminophenyl)methylcarbonyl] ethyl] phenyl) ethylamino-5'-*N*-ethyl carboxamidoadenosine), DITC-APEC (2-[*p*-(4-isothiocyanatophenylamino thiocarbonyl-2-ethyl)-phenylethylamino]-5'-*N*-ethylcarbox amido adenosine), DPMA (N^6-(2(3,5-dimethoxy phenyl)-2-(2-methylphenyl)ethyl) adenosine), *S*-PHPNECA ((*S*)-2-phenylhydroxypropynyl-5'-*N*-ethylcarboxamido adenosine), WRC-0470 (2-cyclohexylmethylidenehydrazinoadenosine), AMP-579 (1*S*-[1a,2b,3b,4a(S*)]]-4-[7-[[2-(3-chloro-2-thienyl)-1-methylpropyl]amino]-3H-imidazo [4,5-b] pyridyl-3-yl] cyclopentane carboxamide), IB-MECA (N^6- (3-iodobenzyl) adenosine -5'-*N*-methyluronamide), 2-CIADO (2-chloroadenosine), I-ABA (N^6-(4-amino-3-iodobenzyl) adenosine), *S*-PIA (*S*-N^6-(phenylisopropyl)adenosine), 2-[(2-aminoethyl-aminocarbonylethyl) phenylethyl amino]-5'-*N*-ethyl-carboxamidoadenosine, 2-Cl-IB-MECA (2-chloro-N^6- (3-iodobenzyl)adenosine-5'-*N*-methyluronamide), adenosine, polyadenylic acid, and any mixture thereof.

24. (Original): A method of preventing organ ischemia or reperfusion injury comprising concomitantly administering to a living subject in need thereof

a. a protease inhibitor; and

b. an agent that alters activities of G protein coupled receptors and cAMP or a pharmaceutically acceptable derivative or prodrug thereof.

25. (Currently amended): The method of claim 24, wherein the protease inhibitor is selected from the group consisting of 4-(2-aminoethyl) benzenesulfonylfluoride, ~~□-amino-*n*-caproic acid~~ε-amino-*n*-caproic acid, ~~□$_1$-antichymotrypsin~~α_1-antichymotrypsin, antipain, antithrombin III, ~~□$_1$-antitrypsin~~α_1-antitrypsin, *p*-amidinophenylmethyl sulfonyl fluoride, aprotinin, cathepsin/subtilisin inhibitor (Boc-Val-Phe-NHO-Bz-*p*Cl), chymostatin ~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-□-[2-amidohexahydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal)~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-α-[2-amidohexahydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal), chymotrypsin inhibitor I, 3,4-dichloroisocoumarin, diisopropylfluoro phosphate, dipeptidylpeptidase IV inhibitor I (Ile-Pro-Ile), dipeptidylpeptidase IV inhibitor II (H-Glu-(NHO-Bz)-Pyr), ecotin, elastase inhibitor I (Boc-Ala-Ala-Ala-NHO-Bz), ~~□$_2$-macroglobulin~~α_2-macroglobulin, PPACK (*D*-Phe-Pro-Arg-chloromethylketone), PPACK II, N^a-tosyl-Lys chloromethyl ketone, N^a-tosyl-Phe chloromethyl ketone, acetyl-pepstatin (Ac-Val-Val-(3*S*,4*S*)-Sta-Ala-(3*S*,4*S*)-Sta-OH), calpain inhibitor I (*N*-acetyl-Leu-Leu-norleucinal), calpain inhibitor II (*N*-acetyl -Leu-Leu-Met-CHO), amastatin ([(2*S*, 2*R*)]-3-amino-2-hydroxy-5-methylhexanoyl] -Val-Val-Asp-OH), arphamenine A ((2*R*,5*S*)-5-amino-8-guanidino-4-oxo-2-phenylmethyl octanoic acid), arphamenine B ((2*R*,5*S*)-5-amino-8-guanidino-4-oxo-2-*p*-hydroxyphenyl methyloctanoic acid), benzamidine, bestatin ([(2*S*, 2*R*)-3-amino-2-hydroxy-4-phenyl butanoyl] -*L*-Leucine), CA-074 ((*L*-3-*trans*-[propylcarbamoyl]oxirane-2-carbonyl)-*L*-isoleucyl-*L*-proline), CA-074-Me ((*L*-3-*trans*-[propylcarbamoyl]oxirane-2-carbonyl)-*L*-isoleucyl-*L*-proline-methylester), calpastatin, calpeptin (benzyloxycarbonylleucyl-norleucinal), carboxypeptidase inhibitor, cathepsin inhibitor I (*Z*-Phe-Gly-NHO-Bz), cathepsin inhibitor II (*Z*-Phe-Gly-NHO-Bz-*p*Me), cathepsin inhibitor III (*Z*-Phe-Gly-NHO-Bz-*p*OMe), cathepsin B inhibitor I (*Z*-Phe-Ala-CH_2F), cathepsin B inhibitor II (Ac-Leu-Val-lysinal), cathepsin L inhibitor I (*Z*-Phe-Phe- CH_2F), cathepsin L inhibitor II (*Z*-Phe-Tyr-CHO), cathepsin L inhibitor III (*Z*-Phe-Tyr-(*t*-Bu)-CHN_2), cathepsin L inhibitor IV (1-naphthalenesulfonyl-Ile-Trp-CHO), cathepsin L inhibitor V (*Z*-Phe-Tyr(O*t*Bu)-COCHO), cathepsin L inhibitor VI ~~(*N*-(4-biphenylacetyl)-*S*-methylcysteine-(*D*)-Arg-Phe-□-~~

~~phenethylamide)~~(*N*-(4-biphenylacetyl)-*S*-methylcysteine-(*D*)-Arg-Phe-β-phenethylamide), cathepsin S inhibitor (*Z*-Phe-Leu-COCHO), cystatin, diprotin A (H-Ile-Pro-Ile-OH), E-64 (*trans*-epoxysuccinyl-*L*-leucylamido-(4-guanidino)butane), E-64 d (loxistatin, or (2*S*,3*S*)-*trans*-epoxysuccinyl-*L*-leucylamido-3-methylbutane ethyl ester), ebelactone A (3,11-dihydroxy-2,4,6,8,10,12-hexamethyl-9-oxo-6-tetradecenoic 1,3-lactone), ebelactone B (2-ethyl-3,11-dihydroxy-4,6,8,10,12-penta methyl -9-oxo-6-tetradecenoic 1,3-lactone), EDTA (ethylenediamine tetraacetic acid), EGTA ~~(ethyleneglycol-*bis*(□-aminoethyl)-*N,N,N',N'*-tetraacetic acid)~~(ethyleneglycol-*bis*(β-aminoethyl)-*N,N,N',N'*-tetraacetic acid), elastase inhibitor II (MeOSuc-Ala-Ala-Pro-Ala-CMK), elastase inhibitor III (MeOSuc-Ala-Ala-Pro-Val-CMK), elastatinal (Leu-(Cap)-Gln-Ala-al or *N*-[(*S*)-1-carboxy-isopentyl)-carbamoyl-alpha-(2-iminohexahydro-4(*S*)-pyrimidyl]-*L*-glycyl-*L*-glutaminyl-*L*-alaninal), E-64 (*trans*-epoxysuccinyl-*L*-leucylamido-(4-guanidino)butane), E-64d (loxistatin, or (2*S*,3*S*)-*trans*-epoxysuccinyl-*L*-leucylamido-3-methylbutane ethyl ester), *N*-ethyl maleimide, GGACK (1,5-dansyl-*L*-glutamyl-*L*-glycyl-*L*-arginine chloro methyl ketone), galardin (*N*-[(2*S*)-(methoxycarbonylmethyl)-4-methylpentanoyl]-*L*-tryptophan-methyl amide), 2-guanidinoethylmercaptosuccinic acid, hirudin, HIV protease inhibitor (Ac-Leu-Val-phenylalaninal), leuhistin (((2*R*,3*S*)-3-amino-2-hydroxy-2-(1H-imidazol-4-ylmethyl)-5-methyl)-5-methylhexanoic acid), leupeptin (acetyl-leucyl-leucyl-arginal), NCO-700, PEFABLOC SC (4-(2-aminoethyl)-benzenesulfonyl fluoride), pepstatin (isovaleryl-Val-Val-4-amino-3-hydroxy-6-methylheptanoyl-Ala-4-amino-3-hydroxy-6-methylheptanoic acid), phebestin ((2*S*,3*R*)-3-amino-2-hydroxy-4-phenylbutanoyl-*L*-valyl-*L*-phenylalanine), PMSF (phenyl methyl sulfonyl fluoride), phosphoramidon (*N*-alpha-*L*-rhamnopyranosyloxy(hydroxyl phosphinyl)-*L*-Leucyl-*L*-tryptophan, plummer's inhibitor (*D,L*-2-mercaptomethyl-3-guanidino-ethylthiopropanoic acid), 1,10-phenanthroline, subtilisin inhibitor I (Boc-Ala-Ala-NHO-Bz), subtilisin inhibitor II (*Z*-Gly-Phe-NHO-Bz), subtilisin inhibitor III (*Z*-Gly-Phe-NHO-Bz-*p*OMe), subtilisin inhibitor IV (Boc-Pro-Phe-NHO-Bz-*p*Cl), subtilisin inhibitor V (Boc-Ala-Pro-Phe-NHO-Bz), TIMP-2 (tissue inhibitor of metalloproteinase 2), trypsin inhibitor, secretory leukocyte protease inhibitor, and any mixture there of.

26. (Original): The method of claim 24, wherein the agent that alters the activities of G-protein coupled receptors and cAMP or pharmaceutically acceptable derivative is selected from the group consisting of AB-MECA (N^6-4-aminobenzyl-5'-*N*-methylcarboxamidoadenosine), CPA (N^6-cyclopentyladenosine), ADAC (N^6- [4-[[[4-[[[(2-aminoethyl) amino] carbonyl] methyl]-anilino] carbonyl] methyl] phenyl] adenosine), CCPA (2-chloro-N^6-cyclopentyl adenosine), CHA (N^6-cyclohexyladenosine), GR79236 (N^6-[1*S*, *trans*,2-hydroxycyclo pentyl] adenosine), *S*-ENBA ((2*S*)- N^6-(2-endonorbanyl)adenosine), IAB-MECA (N^6-(4-amino-3-iodobenzyl)adenosine-5'-*N*-methylcarboxamidoadenosine), *R*-PIA (*R*-N^6-(phenyl isopropyl) adenosine), ATL146e (4-{3-[6-amino-9-(5-ethylcarbamoyl-3,4-dihydroxy-tetrahydro-furan-2-yl)-9H-purin-2-yl]-prop-2-ynyl}-cyclohexanecarboxylic acid methyl ester), CGS-21680 (APEC or 2-[*p*-(2-carbonyl-ethyl)-phenyl ethyl amino]-5'-*N*-ethylcarboxamidoadenosine), CV1808 (2-phenylaminoadenosine), HENECA (2-hex-1-ynyl-5'-*N*-ethylcarboxamido adenosine), NECA (5'-*N*-ethyl-carboxamido adenosine), PAPA-APEC (2-(4-[2-[(4-aminophenyl)methylcarbonyl]ethyl] phenyl) ethylamino-5'-*N*-ethyl carboxamidoadenosine), DITC-APEC (2-[*p*-(4-isothiocyanatophenylamino thio carbonyl -2-ethyl)-phenylethylamino]-5'-*N*-ethylcarboxamidoadenosine), DPMA (N^6-(2(3,5-dimethoxy phenyl)-2-(2-methylphenyl)ethyl)adenosine), *S*-PHPNECA ((*S*)-2-phenylhydroxypropynyl-5'-*N*-ethylcarboxamidoadenosine), WRC-0470 (2-cyclohexyl methylidenehydrazinoadenosine), AMP-579 (1*S*-[1a,2b,3b,4a(S*)]]-4-[7-[[2-(3-chloro-2-thienyl)-1-methylpropyl]amino]-3H-imidazo [4,5-b] pyridyl-3-yl] cyclopentane carbox amide), IB-MECA (N^6- (3-iodobenzyl)adenosine-5'-*N*-methyluronamide), 2-CIADO (2-chloroadenosine), I-ABA (N^6-(4-amino-3-iodobenzyl) adenosine), *S*-PIA (*S*-N^6-(phenyl isopropyl) adenosine), 2-[(2-aminoethyl-aminocarbonylethyl) phenylethyl amino]-5'-*N*-ethyl-carboxamidoadenosine, 2-Cl-IB-MECA (2-chloro-N^6- (3-iodobenzyl)adenosine-5'-*N*-methyluronamide), adenosine, polyadenylic acid, and any mixture thereof.

27. (Original): A method of preventing organ ischemia or reperfusion injury comprising administering to a living subject in need thereof sequentially in any order

a. a protease inhibitor; and

b. an agent that alters activities of G protein coupled receptors and cAMP or a pharmaceutically acceptable derivative or prodrug thereof.

28. (Currently amended): The method of claim 27, wherein the serine protease inhibitor is selected from the group consisting of 4-(2-aminoethyl) benzenesulfonylfluoride, ~~□-amino-*n*-caproic acid~~ε-amino-*n*-caproic acid, ~~□$_1$-antichymotrypsin~~α_1-antichymotrypsin, antipain, antithrombin III, ~~□$_1$-antitrypsin~~α_1-antitrypsin, *p*-amidinophenylmethyl sulfonyl fluoride, aprotinin, cathepsin/subtilisin inhibitor (Boc-Val-Phe-NHO-Bz-*p*Cl), chymostatin ~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-□-[2-amidohexahydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal)~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-α-[2-amidohexahydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal), chymotrypsin inhibitor I, 3,4-dichloroisocoumarin, diisopropylfluoro phosphate, dipeptidylpeptidase IV inhibitor I (Ile-Pro-Ile), dipeptidylpeptidase IV inhibitor II (H-Glu-(NHO-Bz)-Pyr), ecotin, elastase inhibitor I (Boc-Ala-Ala-Ala-NHO-Bz), ~~□$_2$-macroglobulin~~α_2-macroglobulin, PPACK (*D*-Phe-Pro-Arg-chloromethylketone), PPACK II, N^a-tosyl-Lys chloromethyl ketone, N^a-tosyl-Phe chloromethyl ketone, acetyl-pepstatin (Ac-Val-Val-(3*S*,4*S*)-Sta-Ala-(3*S*,4*S*)-Sta-OH), calpain inhibitor I (*N*-acetyl-Leu-Leu-norleucinal), calpain inhibitor II (*N*-acetyl -Leu-Leu-Met-CHO), amastatin ([(2*S*, 2*R*)]-3-amino-2-hydroxy-5-methylhexanoyl] -Val-Val-Asp-OH), arphamenine A ((2*R*,5*S*)-5-amino-8-guanidino-4-oxo-2-phenylmethyl octanoic acid), arphamenine B ((2*R*,5*S*)-5-amino-8-guanidino-4-oxo-2-*p*-hydroxyphenyl methyloctanoic acid), benzamidine, bestatin ([(2*S*, 2*R*)-3-amino-2-hydroxy-4-phenyl butanoyl] -*L*-Leucine), CA-074 ((*L*-3-*trans*-[propylcarbamoyl]oxirane-2-carbonyl)-*L*-isoleucyl-*L*-proline), CA-074-Me ((*L*-3-*trans*-[propylcarbamoyl]oxirane-2-carbonyl)-*L*-isoleucyl-*L*-proline-methylester), calpastatin, calpeptin (benzyloxycarbonylleucyl-norleucinal), carboxypeptidase inhibitor, cathepsin inhibitor I (*Z*-Phe-Gly-NHO-Bz), cathepsin inhibitor II (*Z*-Phe-Gly-NHO-Bz-*p*Me), cathepsin inhibitor III (*Z*-Phe-Gly-NHO-Bz-*p*OMe), cathepsin B inhibitor I (*Z*-Phe-Ala-CH_2F), cathepsin B inhibitor II (Ac-Leu-Val-lysinal), cathepsin L inhibitor I (*Z*-Phe-Phe- CH_2F), cathepsin L inhibitor II (*Z*-Phe-Tyr-CHO), cathepsin L inhibitor III (*Z*-Phe-Tyr-(*t*-Bu)-CHN_2), cathepsin L inhibitor

IV (1-naphthalenesulfonyl-Ile-Trp-CHO), cathepsin L inhibitor V (*Z*-Phe-Tyr(O*t*Bu)-COCHO), cathepsin L inhibitor VI ~~(*N*-(4-biphenylacetyl)-*S*-methylcysteine-(*D*)-Arg-Phe-□-phenethylamide)~~(*N*-(4-biphenylacetyl)-*S*-methylcysteine-(*D*)-Arg-Phe-β-phenethylamide), cathepsin S inhibitor (*Z*-Phe-Leu-COCHO), cystatin, diprotin A (H-Ile-Pro-Ile-OH), E-64 (*trans*-epoxysuccinyl-*L*-leucylamido-(4-guanidino)butane), E-64 d (loxistatin, or (2*S*,3*S*)-*trans*-epoxysuccinyl-*L*-leucylamido-3-methylbutane ethyl ester), ebelactone A (3,11-dihydroxy-2,4,6,8,10,12-hexamethyl-9-oxo-6-tetradecenoic 1,3-lactone), ebelactone B (2-ethyl-3,11-dihydroxy-4,6,8,10,12-penta methyl -9-oxo-6-tetradecenoic 1,3-lactone), EDTA (ethylenediamine tetraacetic acid), EGTA ~~(ethyleneglycol-*bis*(□-aminoethyl)-*N,N,N',N'*-tetraacetic acid)~~(ethyleneglycol-*bis*(β-aminoethyl)-*N,N,N',N'*-tetraacetic acid), elastase inhibitor II (MeOSuc-Ala-Ala-Pro-Ala-CMK), elastase inhibitor III (MeOSuc-Ala-Ala-Pro-Val-CMK), elastatinal (Leu-(Cap)-Gln-Ala-al or *N*-[(*S*)-1-carboxy-isopentyl)-carbamoyl-alpha-(2-iminohexahydro-4(*S*)-pyrimidyl]-*L*-glycyl-*L*-glutaminyl-*L*-alaninal), E-64 (*trans*-epoxysuccinyl-*L*-leucylamido-(4-guanidino)butane), E-64d (loxistatin, or (2*S*,3*S*)-*trans*-epoxysuccinyl-*L*-leucylamido-3-methylbutane ethyl ester), *N*-ethyl maleimide, GGACK (1,5-dansyl-*L*-glutamyl-*L*-glycyl-*L*-arginine chloro methyl ketone), galardin (*N*-[(2*S*)-(methoxycarbonylmethyl)-4-methylpentanoyl]-*L*-tryptophan-methyl amide), 2-guanidinoethylmercaptosuccinic acid, hirudin, HIV protease inhibitor (Ac-Leu-Val-phenylalaninal), leuhistin (((2*R*,3*S*)-3-amino-2-hydroxy-2-(1H-imidazol-4-ylmethyl)-5-methyl)-5-methylhexanoic acid), leupeptin (acetyl-leucyl-leucyl-arginal), NCO-700, PEFABLOC SC (4-(2-aminoethyl)-benzenesulfonyl fluoride), pepstatin (isovaleryl-Val-Val-4-amino-3-hydroxy-6-methylheptanoyl-Ala-4-amino-3-hydroxy-6-methylheptanoic acid), phebestin ((2*S*,3*R*)-3-amino-2-hydroxy-4-phenylbutanoyl-*L*-valyl-*L*-phenylalanine), PMSF (phenyl methyl sulfonyl fluoride), phosphoramidon (*N*-alpha-*L*-rhamnopyranosyloxy(hydroxyl phosphinyl)-*L*-Leucyl-*L*-tryptophan, plummer's inhibitor (*D,L*-2-mercaptomethyl-3-guanidino-ethylthiopropanoic acid), 1,10-phenanthroline, subtilisin inhibitor I (Boc-Ala-Ala-NHO-Bz), subtilisin inhibitor II (*Z*-Gly-Phe-NHO-Bz), subtilisin inhibitor III (*Z*-Gly-Phe-NHO-Bz-*p*OMe), subtilisin inhibitor IV (Boc-Pro-Phe-NHO-Bz-*p*Cl), subtilisin inhibitor V (Boc-Ala-Pro-Phe-NHO-Bz), TIMP-2 (tissue inhibitor of metalloproteinase

2), trypsin inhibitor, secretory leukocyte protease inhibitor, and any mixture there of.

29. (Original): The method of claim 27, wherein the agent that alters activities of G-protein coupled receptors and cAMP or pharmaceutically acceptable derivative is selected from the group consisting of AB-MECA (N^6-4-aminobenzyl-5'-*N*-methylcarboxamidoadenosine), CPA (N^6-cyclopentyladenosine), ADAC (N^6- [4-[[[4-[[[(2-aminoethyl) amino] carbonyl] methyl]-anilino] carbonyl] methyl] phenyl] adenosine), CCPA (2-chloro-N^6-cyclopentyl adenosine), CHA (N^6-cyclohexyladenosine), GR79236 (N^6-[1*S*, *trans*,2-hydroxycyclo pentyl] adenosine), *S*-ENBA ((2*S*)- N^6-(2-endonorbanyl)adenosine), IAB-MECA (N^6-(4-amino-3-iodobenzyl)adenosine-5'-*N*-methylcarboxamidoadenosine), *R*-PIA (*R*-N^6-(phenyl isopropyl) adenosine), ATL146e (4-{3-[6-amino-9-(5-ethylcarbamoyl-3,4-dihydroxy-tetrahydro-furan-2-yl)-9H-purin-2-yl]-prop-2-ynyl}-cyclohexanecarboxylic acid methyl ester), CGS-21680 (APEC or 2-[*p*-(2-carbonyl-ethyl)-phenyl ethyl amino]-5'-*N*-ethylcarboxamidoadenosine), CV1808 (2-phenylaminoadenosine), HENECA (2-hex-1-ynyl-5'-*N*-ethylcarboxamido adenosine), NECA (5'-*N*-ethyl-carboxamido adenosine), PAPA-APEC (2-(4-[2-[(4-aminophenyl)methylcarbonyl]ethyl] phenyl) ethylamino-5'-*N*-ethyl carboxamidoadenosine), DITC-APEC (2-[*p*-(4-isothiocyanatophenylamino thio carbonyl-2-ethyl)-phenylethylamino]-5'-*N*-ethylcarboxamidoadenosine), DPMA (N^6-(2(3,5-dimethoxy phenyl)-2-(2-methylphenyl)ethyl)adenosine), *S*-PHPNECA ((*S*)-2-phenylhydroxypropynyl-5'-*N*-ethylcarboxamidoadenosine), WRC-0470 (2-cyclohexyl methylidenehydrazinoadenosine), AMP-579 (1*S*-[1a,2b,3b,4a(S*)]]-4-[7-[[2-(3-chloro-2-thienyl)-1-methylpropyl]amino]-3H-imidazo [4,5-b] pyridyl-3-yl] cyclopentane carboxamide), IB-MECA (N^6- (3-iodobenzyl)adenosine-5'-*N*-methyluronamide), 2-CIADO (2-chloroadenosine), I-ABA (N^6-(4-amino-3-iodobenzyl) adenosine), *S*-PIA (*S*-N^6-(phenylisopropyl)adenosine), 2-[(2-aminoethyl-aminocarbonylethyl) phenylethyl amino]-5'-*N*-ethyl-carboxamidoadenosine, 2-Cl-IB-MECA (2-chloro-N^6- (3-iodobenzyl) adenosine-5'-*N*-methyluronamide), adenosine, polyadenylic acid, and any mixture thereof.

30. (Original): A method of preventing organ or tissue injury at predetermined point or period of intervention comprising administrating to a living subject in need thereof a pharmaceutical composition comprising:
    a. a protease inhibitor; and
    b. an agent that alters activities of G protein coupled receptors and cAMP, an analog or a pharmaceutically acceptable derivative or prodrug thereof.

31. (Original): The method of claim 30, wherein the organ or tissue injury is related to at least one of cardiac surgery, non-surgical cardiac revascularization, organ transplantation, perfusion, ischemia, reperfusion, ischemia-reperfusion injury, oxidant injury, cytokine induced injury, shock induced injury, resuscitations injury, or apoptosis.

32. (Original): The method of claim 30, wherein the administration is made at the predetermined point of time related to at least one of pre-treatment regimen, pharmacological preconditioning, reperfusion or post interventional therapy, wherein the pharmacological preconditioning is a treatment administered before the ischemic intervention followed by a brief period of reperfusion or washout.

33. (Currently amended): The method of claim 30, wherein the protease inhibitor is selected from the group consisting of 4-(2-aminoethyl) benzenesulfonylfluoride, ~~□-amino-*n*-caproic acid~~ε-amino-*n*-caproic acid, ~~□$_1$-antichymotrypsin~~α_1-antichymotrypsin, antipain, antithrombin III, ~~□$_1$-antitrypsin~~α_1-antitrypsin, *p*-amidinophenylmethyl sulfonyl fluoride, aprotinin, cathepsin/subtilisin inhibitor (Boc-Val-Phe-NHO-Bz-*p*Cl), chymostatin ~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-□-[2-amidohexahydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal)~~([(*S*)-1-carboxy-2-phenylethyl]-carbamoyl-α-[2-amidohexahydro-4(*S*)-pyrimidyl]-(*S*)-glycyl-[A = Leu, B = Val, or C = Ile]-phenylalaninal), chymotrypsin inhibitor I, 3,4-dichloroisocoumarin, diisopropylfluoro phosphate, dipeptidylpeptidase IV inhibitor I (Ile-Pro-Ile), dipeptidylpeptidase IV inhibitor II (H-Glu-(NHO-Bz)-Pyr), ecotin, elastase inhibitor I (Boc-Ala-Ala-Ala-NHO-Bz), ~~□$_2$-macroglobulin~~α_2-macroglobulin, PPACK (*D*-Phe-Pro-Arg-chloromethylketone),

PPACK II, N^a-tosyl-Lys chloromethyl ketone, N^a-tosyl-Phe chloromethyl ketone, acetyl-pepstatin (Ac-Val-Val-(3*S*,4*S*)-Sta-Ala-(3*S*,4*S*)-Sta-OH), calpain inhibitor I (*N*-acetyl-Leu-Leu-norleucinal), calpain inhibitor II (*N*-acetyl -Leu-Leu-Met-CHO), amastatin ([(2*S*, 2*R*)]-3-amino-2-hydroxy-5-methylhexanoyl] -Val-Val-Asp-OH), arphamenine A ((2*R*,5*S*)-5-amino-8-guanidino-4-oxo-2-phenylmethyl octanoic acid), arphamenine B ((2*R*,5*S*)-5-amino-8-guanidino-4-oxo-2-*p*-hydroxyphenyl methyloctanoic acid), benzamidine, bestatin ([(2*S*, 2*R*)-3-amino-2-hydroxy-4-phenyl butanoyl] -*L*-Leucine), CA-074 ((*L*-3-*trans*-[propylcarbamoyl]oxirane-2-carbonyl)-*L*-isoleucyl-*L*-proline), CA-074-Me ((*L*-3-*trans*-[propylcarbamoyl]oxirane-2-carbonyl)-*L*-isoleucyl-*L*-proline-methylester), calpastatin, calpeptin (benzyloxycarbonylleucyl-norleucinal), carboxypeptidase inhibitor, cathepsin inhibitor I (*Z*-Phe-Gly-NHO-Bz), cathepsin inhibitor II (*Z*-Phe-Gly-NHO-Bz-*p*Me), cathepsin inhibitor III (*Z*-Phe-Gly-NHO-Bz-*p*OMe), cathepsin B inhibitor I (*Z*-Phe-Ala-CH_2F), cathepsin B inhibitor II (Ac-Leu-Val-lysinal), cathepsin L inhibitor I (*Z*-Phe-Phe- CH_2F), cathepsin L inhibitor II (*Z*-Phe-Tyr-CHO), cathepsin L inhibitor III (*Z*-Phe-Tyr-(*t*-Bu)-CHN_2), cathepsin L inhibitor IV (1-naphthalenesulfonyl-Ile-Trp-CHO), cathepsin L inhibitor V (*Z*-Phe-Tyr(O*t*Bu)-COCHO), cathepsin L inhibitor VI ~~(*N*-(4-biphenylacetyl)-*S*-methylcysteine-(*D*)-Arg-Phe-□-phenethylamide)~~(*N*-(4-biphenylacetyl)-*S*-methylcysteine-(*D*)-Arg-Phe-β-phenethylamide), cathepsin S inhibitor (*Z*-Phe-Leu-COCHO), cystatin, diprotin A (H-Ile-Pro-Ile-OH), E-64 (*trans*-epoxysuccinyl-*L*-leucylamido-(4-guanidino)butane), E-64 d (loxistatin, or (2*S*,3*S*)-*trans*-epoxysuccinyl-*L*-leucylamido-3-methylbutane ethyl ester), ebelactone A (3,11-dihydroxy-2,4,6,8,10,12-hexamethyl-9-oxo-6-tetradecenoic 1,3-lactone), ebelactone B (2-ethyl-3,11-dihydroxy-4,6,8,10,12-penta methyl -9-oxo-6-tetradecenoic 1,3-lactone), EDTA (ethylenediamine tetraacetic acid), EGTA ~~(ethyleneglycol-*bis*(□-aminoethyl)-*N,N,N',N'*-tetraacetic acid)~~(ethyleneglycol-*bis*(β-aminoethyl)-*N,N,N',N'*-tetraacetic acid), elastase inhibitor II (MeOSuc-Ala-Ala-Pro-Ala-CMK), elastase inhibitor III (MeOSuc-Ala-Ala-Pro-Val-CMK), elastatinal (Leu-(Cap)-Gln-Ala-al or *N*-[(*S*)-1-carboxy-isopentyl)-carbamoyl-alpha-(2-iminohexahydro-4(*S*)-pyrimidyl]-*L*-glycyl-*L*-glutaminyl-*L*-alaninal), E-64 (*trans*-epoxysuccinyl-*L*-leucylamido-(4-guanidino)butane), E-64d (loxistatin, or (2*S*,3*S*)-*trans*-epoxysuccinyl-*L*-leucylamido-

3-methylbutane ethyl ester), *N*-ethyl maleimide, GGACK (1,5-dansyl-*L*-glutamyl-*L*-glycyl-*L*-arginine chloro methyl ketone), galardin (*N*-[(2*S*)-(methoxycarbonylmethyl)-4-methylpentanoyl]-*L*-tryptophan-methyl amide), 2-guanidinoethylmercaptosuccinic acid, hirudin, HIV protease inhibitor (Ac-Leu-Val-phenylalaninal), leuhistin (((2*R*,3*S*)-3-amino-2-hydroxy-2-(1H-imidazol-4-ylmethyl)-5-methyl)-5-methylhexanoic acid), leupeptin (acetyl-leucyl-leucyl-arginal), NCO-700, PEFABLOC SC (4-(2-aminoethyl)-benzenesulfonyl fluoride), pepstatin (isovaleryl-Val-Val-4-amino-3-hydroxy-6-methylheptanoyl-Ala-4-amino-3-hydroxy-6-methylheptanoic acid), phebestin ((2*S*,3*R*)-3-amino-2-hydroxy-4-phenylbutanoyl-*L*-valyl-*L*-phenylalanine), PMSF (phenyl methyl sulfonyl fluoride), phosphoramidon (*N*-alpha-*L*-rhamnopyranosyloxy(hydroxyl phosphinyl)-*L*-Leucyl-*L*-tryptophan, plummer's inhibitor (*D,L*-2-mercaptomethyl-3-guanidino-ethylthiopropanoic acid), 1,10-phenanthroline, subtilisin inhibitor I (Boc-Ala-Ala-NHO-Bz), subtilisin inhibitor II (*Z*-Gly-Phe-NHO-Bz), subtilisin inhibitor III (*Z*-Gly-Phe-NHO-Bz-*p*OMe), subtilisin inhibitor IV (Boc-Pro-Phe-NHO-Bz-*p*Cl), subtilisin inhibitor V (Boc-Ala-Pro-Phe-NHO-Bz), TIMP-2 (tissue inhibitor of metalloproteinase 2), trypsin inhibitor, secretory leukocyte protease inhibitor, and any mixture there of.

34. (Original): The method of claim 30, wherein the agent that alters activities of G protein coupled receptors and cAMP is selected from the group consisting of AB-MECA (N^6-4-amino benzyl-5'-*N*-methylcarboxamidoadenosine), CPA (N^6-cyclopentyladenosine), ADAC (N^6- [4-[[[4-[[[(2-aminoethyl) amino] carbonyl] methyl]-anilino] carbonyl] methyl] phenyl] adenosine), CCPA (2-chloro-N^6-cyclopentyladenosine), CHA (N^6-cyclohexyladenosine), GR79236 (N^6-[1*S*, *trans*,2-hydroxycyclopentyl] adenosine), *S*-ENBA ((2*S*)- N^6-(2-endonorbanyl)adenosine), IAB-MECA (N^6-(4-amino-3-iodobenzyl)adenosine-5'-*N*-methylcarboxamidoadenosine), *R*-PIA (*R*-N^6-(phenylisopropyl) adenosine), ATL146e (4-{3-[6-amino-9-(5-ethylcarbamoyl-3,4-dihydroxy-tetrahydro-furan-2-yl)-9H-purin-2-yl]-prop-2-ynyl}-cyclohexanecarboxylic acid methyl ester), CGS-21680 (APEC or 2-[*p*-(2-carbonyl-ethyl)-phenyl ethyl amino]-5'-*N*-ethylcarboxamidoadenosine), CV1808 (2-phenylaminoadenosine), HENECA (2-hex-1-ynyl-5'-*N*-ethylcarboxamido adenosine), NECA (5'-*N*-ethyl-carboxamido adenosine),

PAPA-APEC (2-(4-[2-[(4-aminophenyl) methyl carbonyl]ethyl] phenyl) ethylamino-5'-*N*-ethyl carboxamidoadenosine), DITC-APEC (2-[*p*-(4-isothiocyanatophenylamino thiocarbonyl-2-ethyl)-phenylethylamino]-5'-*N*-ethylcarboxamidoadenosine), DPMA (N^6-(2(3,5-dimethoxy phenyl)-2-(2-methyl phenyl) ethyl)adenosine), *S*-PHPNECA ((*S*)-2-phenylhydroxypropynyl-5'-*N*-ethylcarbox amidoadenosine), WRC-0470 (2-cyclohexylmethylidenehydrazinoadenosine), AMP-579 (1*S*-[1a,2b,3b,4a(S*)]]-4-[7-[[2-(3-chloro-2-thienyl)-1-methylpropyl]amino]-3H-imidazo [4,5-b] pyridyl-3-yl] cyclopentane carboxamide), IB-MECA (N^6- (3-iodobenzyl) adenosine -5'-*N*-methyluronamide), 2-CIADO (2-chloroadenosine), I-ABA (N^6-(4-amino-3-iodobenzyl) adenosine), *S*-PIA (*S*-N^6-(phenylisopropyl)adenosine), 2-[(2-aminoethyl-aminocarbonylethyl) phenylethyl amino]-5'-*N*-ethyl-carboxamidoadenosine, 2-Cl-IB-MECA (2-chloro-N^6- (3-iodobenzyl)adenosine-5'-*N*-methyluronamide), adenosine, polyadenylic acid, and any mixture thereof.